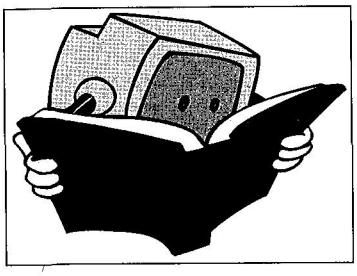
HITACHI



No. X831455

C2575TN
C2576TN
C2577TN
C2975TN
C2976TN
C2977TN
CL2576TAN
CL2976TAN
CP2576TAN
CP2976TAN
C28300

Data contained within this Service manual is subject to alteration for improvement.

Les données fournies dans le présent manuel d'entretien peuvent faire l'objet de modifications en vue de perfectionner le produit.

Die in diesem Wartungshandbuch enthaltenen Spezifikationen können sich zwecks Verbesserungen ändern.

TECHNICAL SPECIFICATIONS

TV Standard..... .....625 lines,
STANDARD I (UK)
B/G/H, L/L', (Export)

Channel coverage . .. .UHF Channels (UK)
UHF/VHF Hyper band (Export)

Aerial input impedance. .. .. 75 ohm
unbalanced

Programme Selectors. .... . Channel UP/DOWN
buttons with 60 programme
remote control
CH direct input
Frequency direct input

Power Consumption
C2576/77/75.. ... . 139 W
C2976/77/75..... .... 141 W
C28300TN... .... 143 W

Picture tubes
C2576/77/75 . . ..59 cm type
C2976/77/75 ... .68 cm type
C28300TN ....66 cm type

Mains Voltage .... .220V/240V 50 Hz

Fuse ....T4.0A Type

Focusing ....Electro static

SPECIFICATIONS TECHNIQUES

Standard TV .....625 lignes,
STANDARD. R-U
B/G/H L/L': (Export)

Couverture de canaux. ..... Canaux UHF (R-U)
UHF/VHF Band hyper (Export)

Impédance d'entrée d'antenne. . . . ..75 ohms
non équilibré

Sélecteurs de programmes ....Touches de
sélection de canaux UP/DOWN (HAUT/BAS)
avec 60 programmes
Télécommande
Entrée directe canal (CH)
Entrée directe fréquence

Consommation propre
C2576/77/75 ....139 W
C2976/77/75.. .... .141 W
C28300TN..... .... .143 W

Tubes-images
C2576/77/75 ....type 59 cm
C2976/77/75. . . ..type 68 cm
C28300TN. .. . . type 66 cm

Tension secteur ....220V/240V 50 Hz

Fusible . .. .Type T4 0A

Mise au point .. ..Electrostatique

SPECIFICATIONS TECHNIQUES

Fernsehnorm .. .. 625 Zeilen,
Fernsehnorm I (nur GB)
Fernsehnorm B/G/H, L/L

Kanäle ....UHF-Bereich (GB)
UHF-/VHF-/Hyperband-Bereich (Export)

Antenneneingangsimpedanz.....75 Ohm
unsymmetrisch

Senderwahl. . ...AUF/AB-Taste
auf Fernbedienung für 60 Sender
Senderdirekteingabe
Frequenzdirekteingabe

Leistungsaufnahme
C2576/77/75 . . . .139 W
C2976/77/75 .. ..141 W
C28300TN ....143 W

Bildröhre
C2576/77/75 ....59 cm
C2976/77/75 ....68 cm
C28300TN..... 66 cm

Netzspannung.....220 V - 240 V, 50 Hz

Sicherung..... .... .T4.0A

Fokusierung ....Elektrostatisch

1997

ENGLISH

SAFETY PRECAUTIONS

WARNING: The following precautions should be observed.

1. Do not install, remove, or handle the picture tube in any manner unless shatter proof goggles are worn. People not so equipped should be kept away while picture tubes are handled. Keep the picture tube away from the body while handling.

2. When service is required, an isolation transformer should be inserted between the power line and the receiver before any service is performed on the chassis.

3. When replacing the chassis in the cabinet, ensure all the protective devices are put back in place.

4. When service is required, observe the original lead dressing. Extra precaution should be taken to ensure correct lead dressing in the high voltage circuitry area.

5. Always use the manufacturer's replacement component. Always replace original spacers and maintain lead lengths. Especially critical components are indicated thus ⚠ on the parts list and should not be replaced by other makes. Furthermore, where a short circuit has occurred, replace those components that indicate evidence of overheating.

6. Before returning a serviced receiver to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the instrument by the manufacturer has become defective, or inadvertently damaged during servicing.

Therefore, the following checks are recommended for the continued protection of the customers and service technicians.

INSULATION

Insulation resistance should not be less than 10M ohms at 500V DC between the main poles and any accessible metal parts.

Also, no flashover or breakdown should occur during the dielectric strength test, applying 3kV AC or 4.25kV DC for two seconds between the main poles and accessible metal parts.

HIGH VOLTAGE

High voltage should always be kept at the rated value of the chassis and no higher. Operating at higher voltages may cause a failure of the picture tube or high voltage supply, and also, under certain circumstances could produce X-radiation levels moderately in excess of design levels. The high voltage must not, under any circumstances, exceed 29kV on the chassis.

X-RADIATION

TUBES: The primary source of X-radiation in this receiver is the picture tube. The tube utilised for the above mentioned function in this chassis is specially constructed to limit X-radiation.

For continued X-radiation protection, replace tube with the same type as the original HITACHI approved type.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in HITACHI television receivers have special safety related characteristics. These characteristics are often not evident from visual inspection, nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified by marking with a ⚠ on the schematics and the replacement parts list contained in this service manual.

The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI recommended replacement one, shown in the parts list of this service manual, may create electrical shock, fire, X-radiation, or other hazards.

Product Safety is continuously under review, and new instructions are issued from time to time. For the latest information, always consult the current HITACHI service manual. A subscription to, or additional copies of HITACHI service manuals may be obtained at a nominal charge from your HITACHI SALES CORPORATION.

CE MARK

Some of these models may contain the CE mark on the rating plate.

This illustrates that the T.V. contains parts that have been specifically approved to provide electromagnetic compatability to designated levels.

Therefore, when replacing any part in this T.V., please use only the correct part itemized in the parts list of this service manual to ensure this standard is maintained.

Also, take care to replace lead dressing to its original state, as this can also have a bearing on the electromagnetic radiation/immunity.

TUBE DISCHARGE

The line output stage can develop voltages in excess of 25kV; if the E.H.T. cap is required to be removed, discharge the anode to chassis via a high value resistor, prior to its removal from the tube.

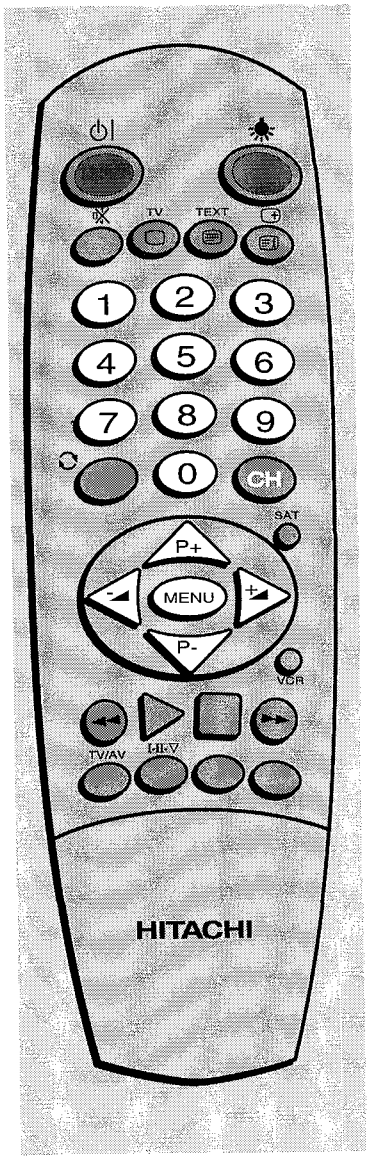
TV OPERATION SUPPLEMENT

The following pages are extracted from the Customer Operating Guide to assist Service Engineers in TV set up

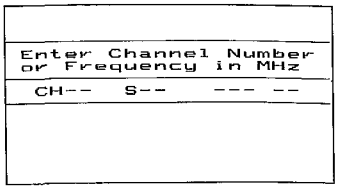
(NOTE: PAGE NUMBERS REFERRED TO WITHIN THIS SECTION ARE UNIQUE TO THE OPERATING GUIDE. THEY DO NOT REFER TO THE PAGE NUMBERS OF THE SERVICE GUIDE OF WHICH THIS SECTION FORMS AN INTEGRAL PART.)

Tuning in your T.V.

AUTOTUNE METHOD

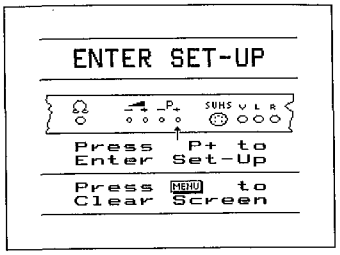


1. Press the CH button on handset. The menu shown will appear on-screen.



2. Now press the MENU button.

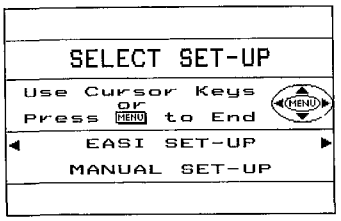
   The ENTER SET–UP menu is then displayed.



3. As instructed, press the **P+** button on the front control panel.

   The SELECT SET–UP menu will now appear.

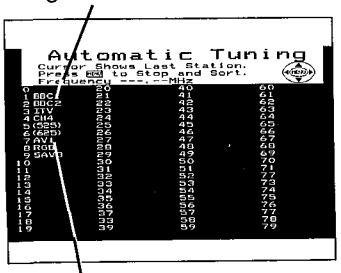
   EASI SET–UP will be highlighted in colour.



4. Press the ◄ or ► button to obtain the Automatic Tuning menu.

   The search tune procedure will now begin.
   The first programme number will be coloured.
   The next programme number will become coloured when a broadcast is found and identified in the display.
   If a broadcast has no identification transmitted, the frequency of that broadcast will appear in brackets instead.

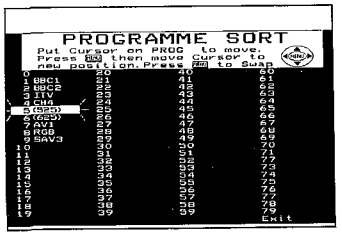
Programme identification



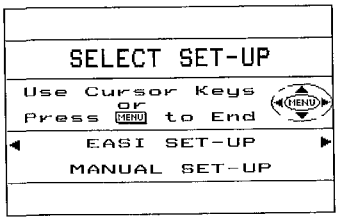
Frequency of broadcast

NOTE: Programme number 0 will not be tuned in. Also, please refer to SATELLITE NAME on page 18 if you have tuned into a satellite broadcast.

5. When all available broadcasts have been tuned in, the Programme Sort menu is then displayed.
   This menu allows you to change the order in which the broadcasts appear. This can be done to suit your personal preference.
   If you wish to do this, refer to page 19, and begin at step 6. This explains how to change a broadcast from programme number 5 to programme number 1 as an example.
   If however you do not wish to use the programme sort facility, then press the ▼, ▲, ◄ or ► buttons to highlight EXIT at the bottom right hand corner of the display.
   The SELECT SET–UP menu will then re-appear.



Programme sort menu

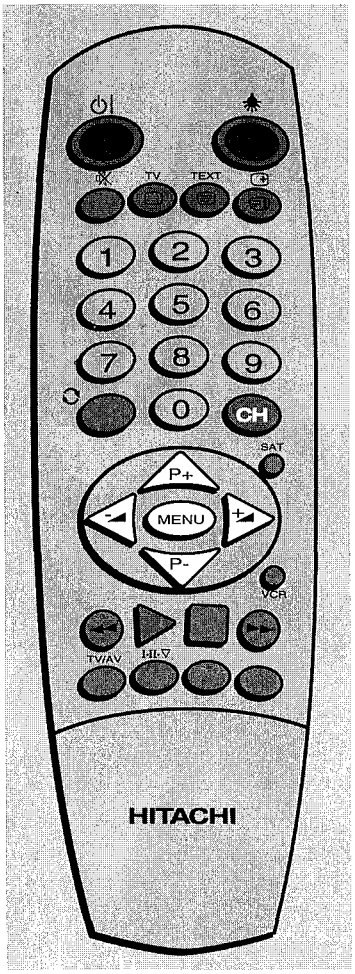


6. Press the MENU button once more. The on-screen menu will disappear.

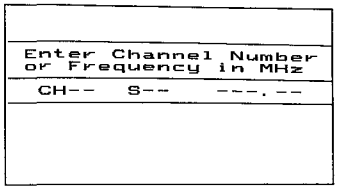
NOTE: After you exit the tuning menu, you can select the programme numbers by pressing the P+ or P– buttons, or by entering the programme number directly using the buttons 0 – 9.

Tuning in your T.V

MANUAL TUNING METHOD

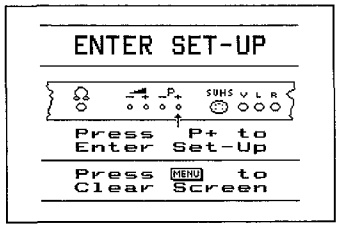


1. Press the CH button on handset. The menu shown will appear on-screen.



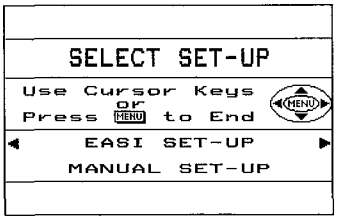
2. Now press the MENU button.

   The ENTER SET–UP menu is then displayed.



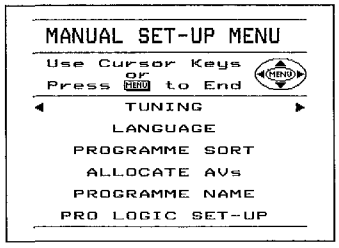
3. As instructed, press the **P+** button on the front control panel.

   The SELECT SET–UP menu will now appear.



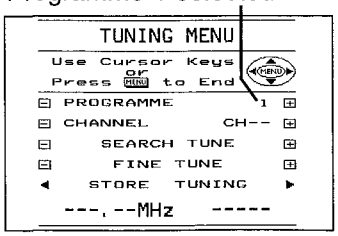
4. Press the ▼ button of handset to highlight MANUAL SET–UP, then press one of the ◄ or ► handset buttons to display the MANUAL SET–UP menu.

   TUNING will be highlighted.



5. Press the ◄ or ► button to display the TUNING MENU.
   PROGRAMME will be highlighted.
   Press the ◄ or ► button until the first programme number on which you wish to tune a broadcast appears.

Programme 1 selected

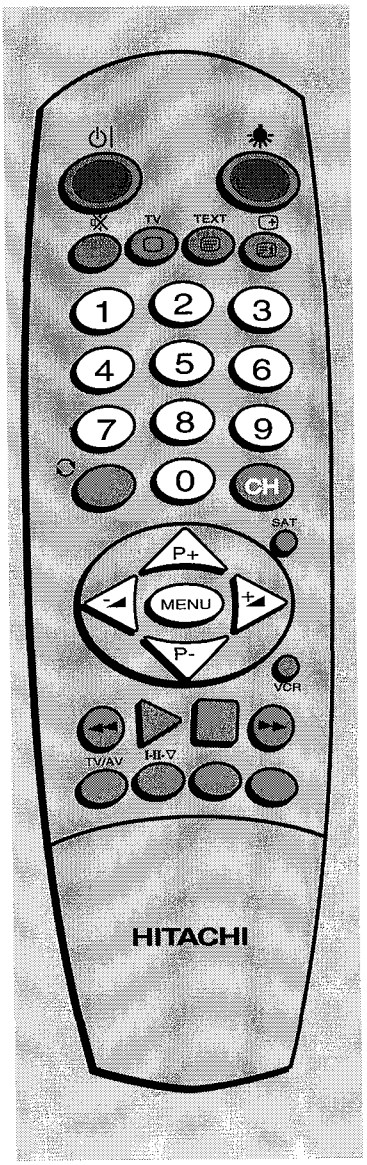


6. Press the ▼ button until SEARCH TUNE is highlighted, then press the ◄ or ► button to begin tuning.

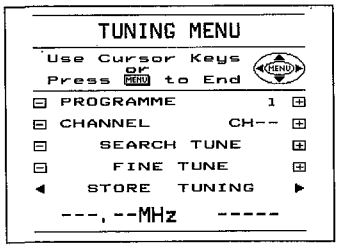
   The present frequency will now appear in the ---.--MHz part of the display, and will increase or decrease in value until a broadcast appears on screen.
   If transmitted, the broadcast identification will appear next to the MHz in the display.
   If this is not the broadcast you desire for the programme number chosen in step 5, then press the ◄ or ► button to repeat search tuning until the desired broadcast appears.

   Alternatively, you can highlight the CHANNEL line in the display using the ▼ or ▲ buttons, then press the ► or ◄ button to step up or down through the available channels until the broadcast you desire is displayed.

Tuning in your T.V.



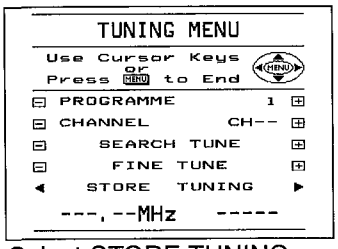
7. Fine tuning will be performed automatically. However, if you wish to make minor adjustments, press the ▼ button to highlight FINE TUNE in the display, then press the ◄ or ► button to obtain the optimum picture and sound.



Select FINE TUNE

8. When satisfied, press the ▼ button of handset until STORE TUNING is highlighted, then press the ◄ or ► button to store.

   The words STORE TUNING will flash briefly to indicate storing has taken place.



Select STORE TUNING

9. Using the ▲or ▼ buttons, highlight PROGRAMME in the display once again.
   Press the ► or ◄ buttons to select the next programme number you desire, then repeat steps 6 – 8.

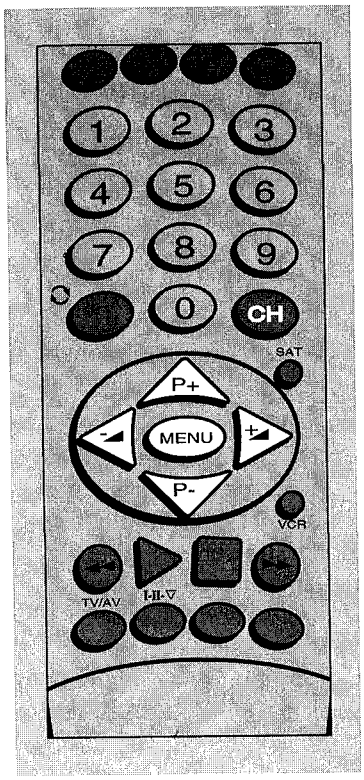
   Continue this method until all the broadcasts in your area have been tuned in and allocated to the programme numbers of your choice.

10. Press the MENU button until all the on-screen menus disappear.

NOTE: After you exit the tuning menu, you can select the programme numbers by pressing the P+ or P– buttons, or by entering the programme number directly using the buttons 0 – 9.

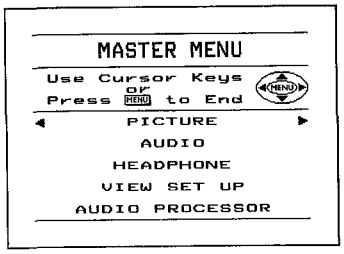
Tuning in your T.V

PROGRAMME INDEX MENU

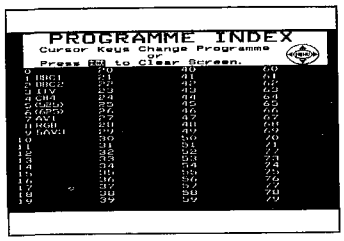


This menu is for guidance purposes only, i.e. you cannot perform any functional changes. However, as an example this menu can be of benefit when a lot of broadcasts have been tuned in previously, and although you cannot remember which programme number contains the broadcast you want, you do remember the name you gave to it. To find the broadcast follow this procedure:-

1. Press the MENU button to display the MASTER MENU.



2. Press the ▼ button to highlight VIEW SET–UP, then press the ◄ or ► button to display the Programme Index menu.
   Look for the programme name you remember giving to the broadcast you require.

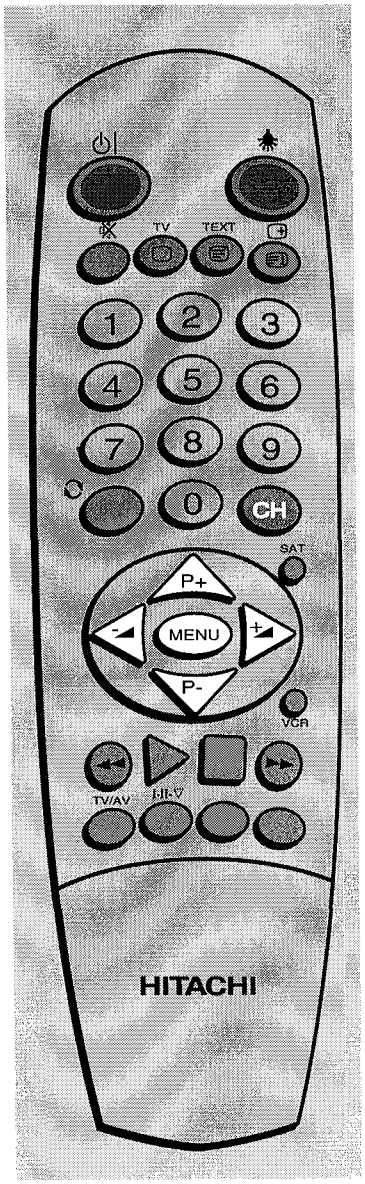


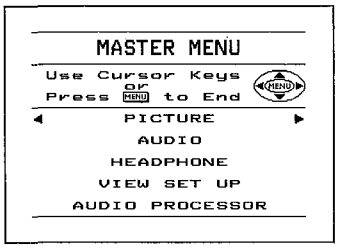
3. Use the ▲, ▼, ◄ or ► buttons to highlight that programme name in the display.
   Once highlighted, the broadcast allocated to that programme number and name will appear on-screen, allowing you to confirm it is the correct one.

4. Press the MENU button.
   The on-screen display will disappear.

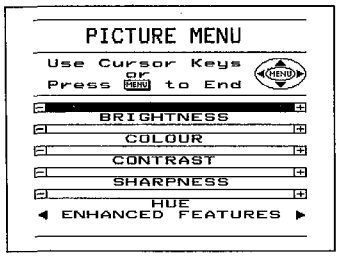
Picture and Audio Settings

PICTURE





1. Press the MENU button once to display the MASTER MENU.
   The word PICTURE will be highlighted, indicating it is available for selection.



2. Press one of the handset buttons ◄ or ► to display the PICTURE menu shown.

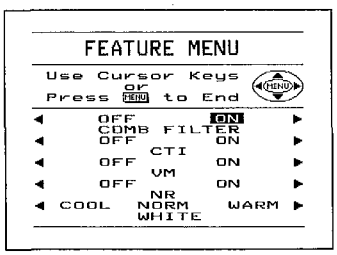
   The BRIGHTNESS scale will be highlighted by a solid coloured bar.

3. Press the ◄ or ► handset buttons to adjust the brightness of the T.V. picture to the level you desire.

4. Press the ▼ button of handset to highlight the next function, i.e. COLOUR, then press the ◄ or ► buttons to adjust the colour of the T.V. picture to the level you desire.

5. Repeat this procedure to adjust the Contrast, Sharpness and Hue as required.

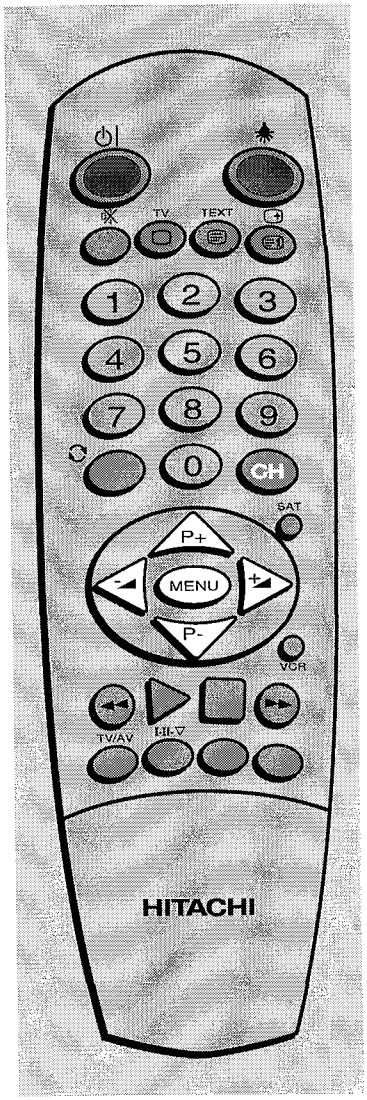
NOTE: The Hue function can only be adjusted when receiving NTSC signals.



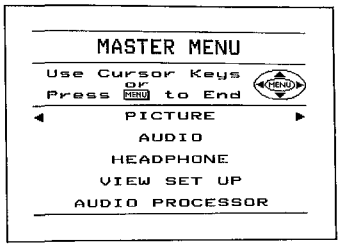
When you highlight ENHANCED FEATURES and press the ◄ or ► button, the FEATURE MENU appears.
The features shown in the display can then be turned on or off as desired, and will depend mainly on personal preference. Try switching each one ON then OFF to see which result you prefer on the T.V. picture.
The ON or OFF in the display will be coloured, indicating the present status of each function.
To change the status of each function, first press the ▼ or ▲ handset button until the present status is highlighted, then press the ◄ or ► button to change.
N.B. When this menu first appears, and also when each of its functions are selected, the menu will be displayed in the background of the picture. This allows you to clearly see the difference each effect has.
After a short time, it will be returned to normal.

6. When you are satisfied with the settings of all functions, press the MENU button.
   The on-screen menu will then disappear.

Picture and Audio Settings



AUDIO

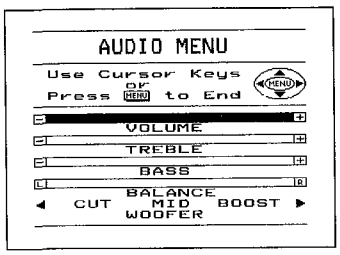


1. Press the MENU button once to display the MASTER MENU shown.
   The word PICTURE will be highlighted.

2. Press the ▼ button of handset to highlight the next function in the menu, i.e. AUDIO.

3. Press the ◄ or ► button to display the AUDIO menu shown.

   The VOLUME scale will be highlighted by a solid coloured bar.



4. Press the ◄ or ► handset buttons to adjust the volume level as desired.

5. Press the ▼ button of handset to highlight the next function, i.e. TREBLE, then press the ◄ or ► buttons to adjust to the level you prefer.

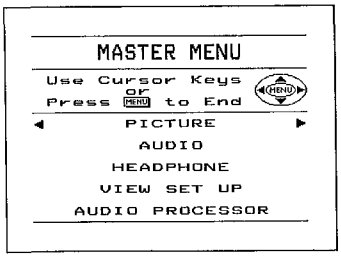
6. Repeat this procedure to select and adjust the BASS and BALANCE settings to suit your personal preference.

NOTE: If any of the DOLBY modes are selected from the sound effects menu (see next page), there will be no balance adjustment in the display.

The WOOFER function in this menu can be set to CUT, MID or BOOST. The present setting will be highlighted. Try each setting to find the one you prefer as follows:–. Press the ▼ or ▲ handset button until the present setting is highlighted, then press the ◄ or ► button to change to the setting you desire.

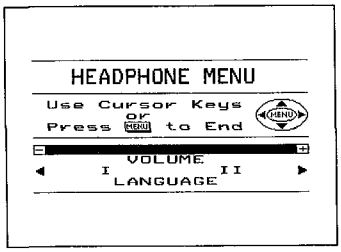
7. When you are satisfied with the settings of all functions, press the MENU button. The on-screen display will then disappear.

HEADPHONE MENU



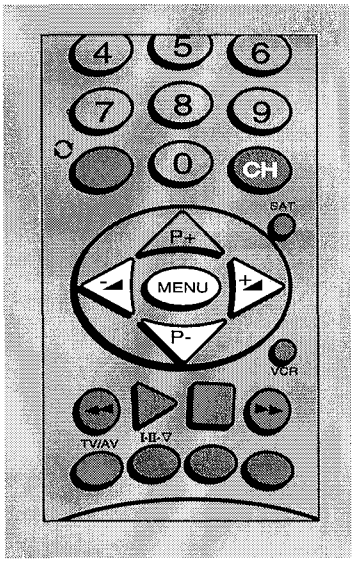
1. Connect headphones to the socket situated behind the door on the front of this T.V. then press the MENU button once to display the MASTER MENU.
   The word PICTURE will be highlighted.

2. Press the ▼ button of handset until HEADPHONE is highlighted, then press the ► button to display the menu shown. The volume scale will be highlighted by a solid coloured bar.

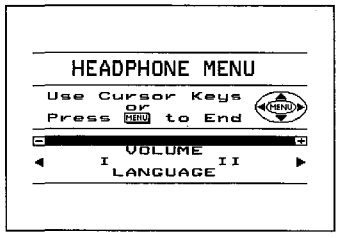


3. Whilst wearing your headphones, press the ◄ or ► buttons of handset to adjust the volume level to suit your personal preference.

Picture and Audio Settings



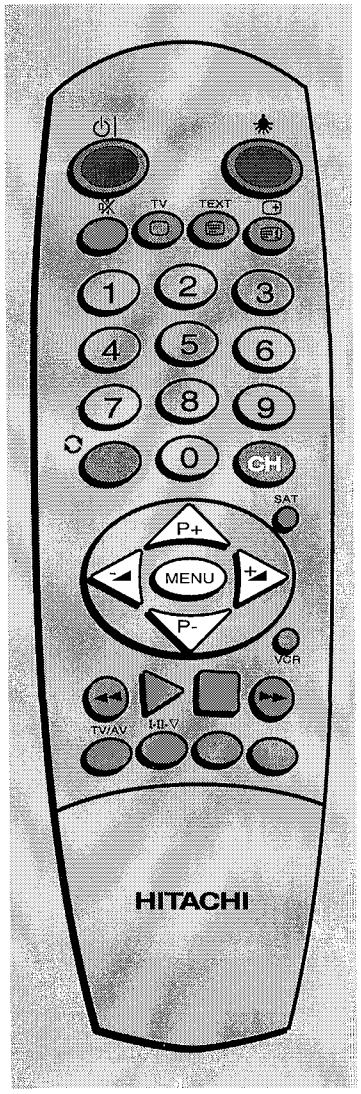
4. If a broadcast contains a Dual language, you can set the headphone to output the language of your choice. The present language setting, i.e. **I** or **II** will be highlighted.
   If this is the one you desire, then no further action is required.
   If however, you wish to select the alternative language as your choice, press the ▼ button of handset to highlight the present setting, then press the ► button to select the other language.



5. Press the MENU button. The on-screen menu will then disappear.

NOTE: After you exit the Audio menu, the volume level can be adjusted temporarily using the + or – buttons. However, The levels stored in the menu will always be returned every time the television is switched on.

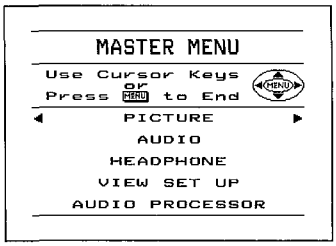
SOUND EFFECTS MENU



This menu enables you to try the various sound effects available, and choose the one most suited to the broadcast you are watching. The effects available are as follows:-

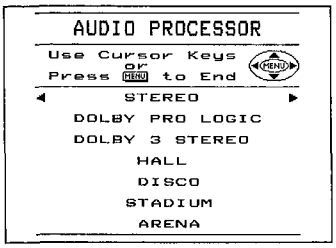
STEREO: Should you wish to change a Dolby Pro Logic broadcast to a normal Stereo/NICAM broadcast, then select this from the on-screen menu.
Also, if a broadcast is not being transmitted in Dolby Pro Logic, for best results we recommend you select the T.V. to this effect.
DOLBY PRO LOGIC: This is the effect selected when the T.V. leaves the factory, and will ensure you enjoy the true sound reproduction of a Dolby Pro Logic Surround broadcast.
NOTE: The full surround effect can only be experienced when the two rear speakers are connected.
DOLBY 3 STEREO: If available space is a problem, and you decide not to connect the two rear speakers, then select this effect. This ensures the T.V. will give a true reproduction of Dolby Pro Logic broadcasts. However, you will not be able to enjoy the full surround effects that are available to you with all the speakers connected.
HALL, DISCO, STADIUM and ARENA: These effects can help to improve your enjoyment of musical broadcasts, or transmissions live from theatres etc.
Select each one in turn to find your personal preference.
3DS: The 3DS system gives a much wider spread of sound from the TV giving the impression of sound coming from the sides of the room rather than the in-built speakers, whilst the important centre dialogue channel is unaltered, still appearing to come from the centre of the screen.

To access the sound effects menu, proceed as follows.



1. Press the MENU button once to display the MASTER MENU.
   The word PICTURE will be highlighted.

2. Press the ▼ button of handset until AUDIO PROCESSOR is highlighted, then press the ◄ or ► button to obtain the menu shown.

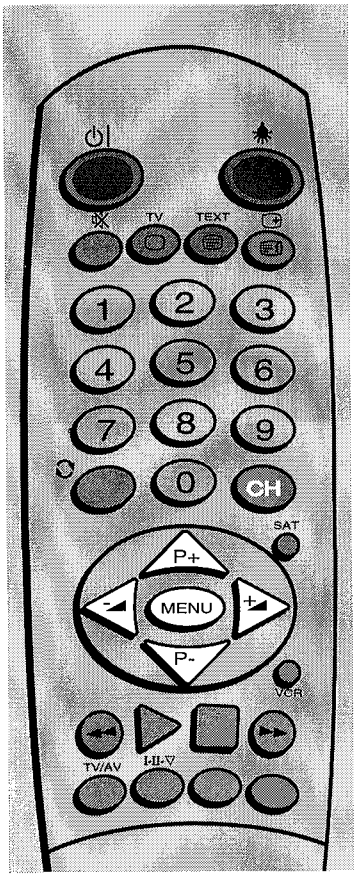


3. Press the ▼ or ▲ button of handset to highlight each effect, then press the ◄ or ► button to activate that effect.

4. Once you have found the effect you prefer, press the MENU button. The on-screen menu will then disappear.

Picture and Audio Settings

DOLBY SET–UP MENU



C28300 ONLY

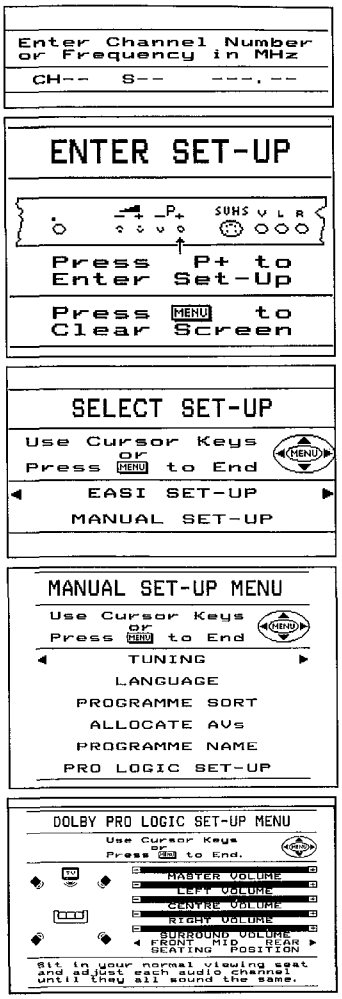
Once you have set this television in one of the DOLBY modes described on page 14, you should then carry out the following procedure to obtain the optimum performance, thereby creating even greater listening satisfaction.

NOTE: Please ensure that 3DS mode is de-activated (see below), before continuing with the Dolby Setup procedure.

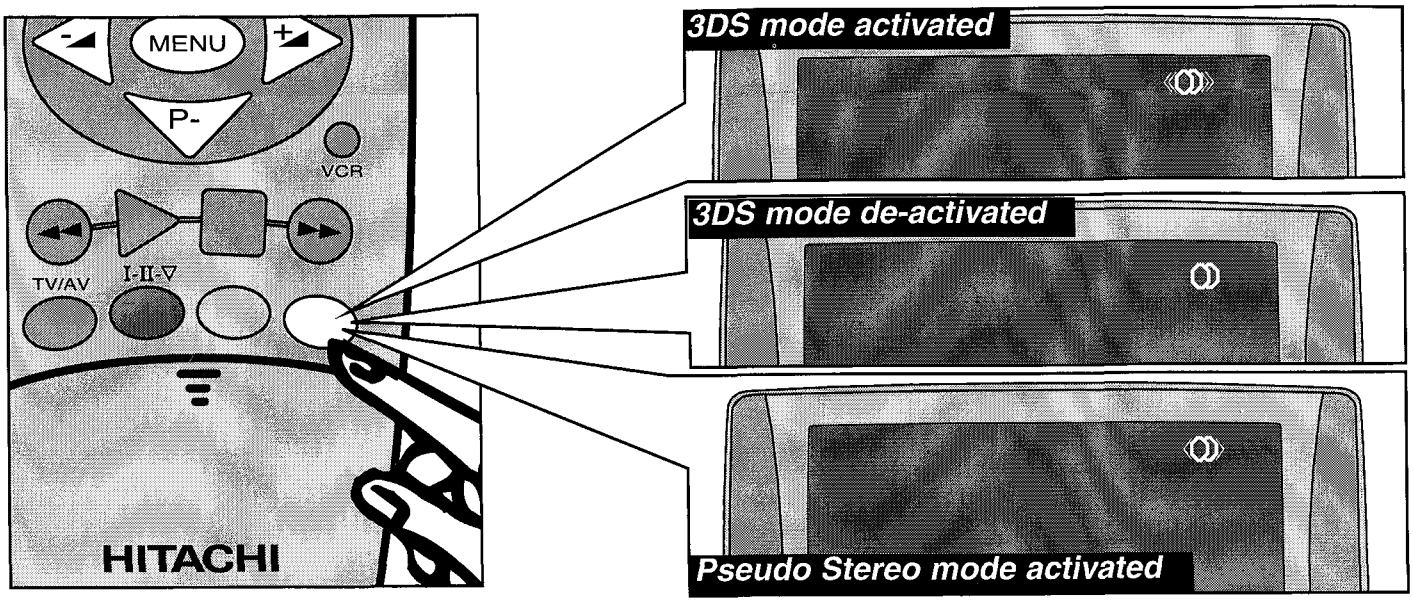
1. Press the CH button on handset. The menu shown will appear on-screen.
2. Now press the MENU button.
   The ENTER SET–UP menu is then displayed.
3. As instructed, press the **P+** button on the front control panel.
   The SELECT SET–UP menu will now appear.
4. Press the ▼ button to highlight MANUAL SET–UP, then press the ► or ◄ button to display the MANUAL SET–UP menu.
5. Press the ▼ button to highlight PRO LOGIC SET–UP, then press the ► or ◄ button to display the menu shown.
   This menu will automatically highlight the LEFT VOLUME, CENTRE VOLUME, RIGHT VOLUME and SURROUND VOLUME in sequence.
   This allows you to adjust the volume output from each channel independently to obtain the correct listening balance relative to your viewing position.
   You can only alter each level whilst it is highlighted by pressing the ► or ◄ buttons on the handset.
6. If you wish to alter the MASTER VOLUME, i.e. the overall volume level, press the ▲ button to highlight that function, then press the ► or ◄ buttons to alter the overall volume to the level you desire.

NOTE: Whilst this DOLBY PRO LOGIC SET–UP menu is on display, you can set the POSITION function if neccessary.

Please refer to the next page for instructions.



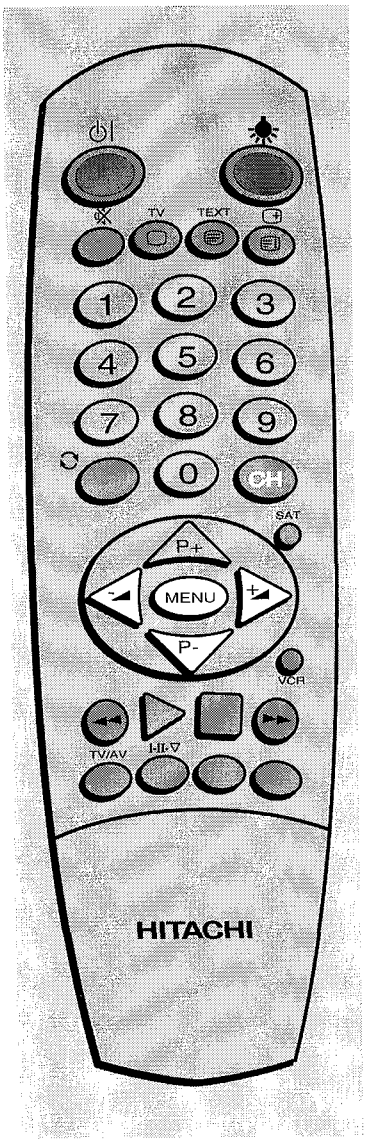
Activating the 3DS sound spatializer. Repeatedly press the blue coloured button on the handset so that the following display is shown on-screen (◄◄)), this indicates that 3DS is activated. A further press de-activates the 3DS mode, shown on screen as (◄)). Press once more selects the Pseudo Stereo mode, this mode is shown as (◄)) on-screen when selected. This function is particularly suited to monaural signals.



NOTE: In order to appreciate the effect of 3DS it is essential that you are listening to a stereophonic program with active left or right information. For example, certain programs containing only speech will appear to have no effect when 3DS mode is selected.

Picture and Audio Settings

TO SET THE POSITION FUNCTION

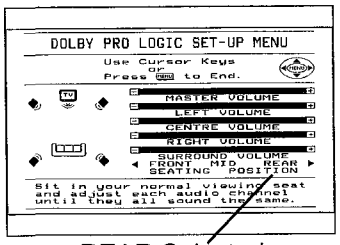


This function is only required if you have connected the rear surround speakers and have selected DOLBY PRO LOGIC from the sound effects as explained on page 14.

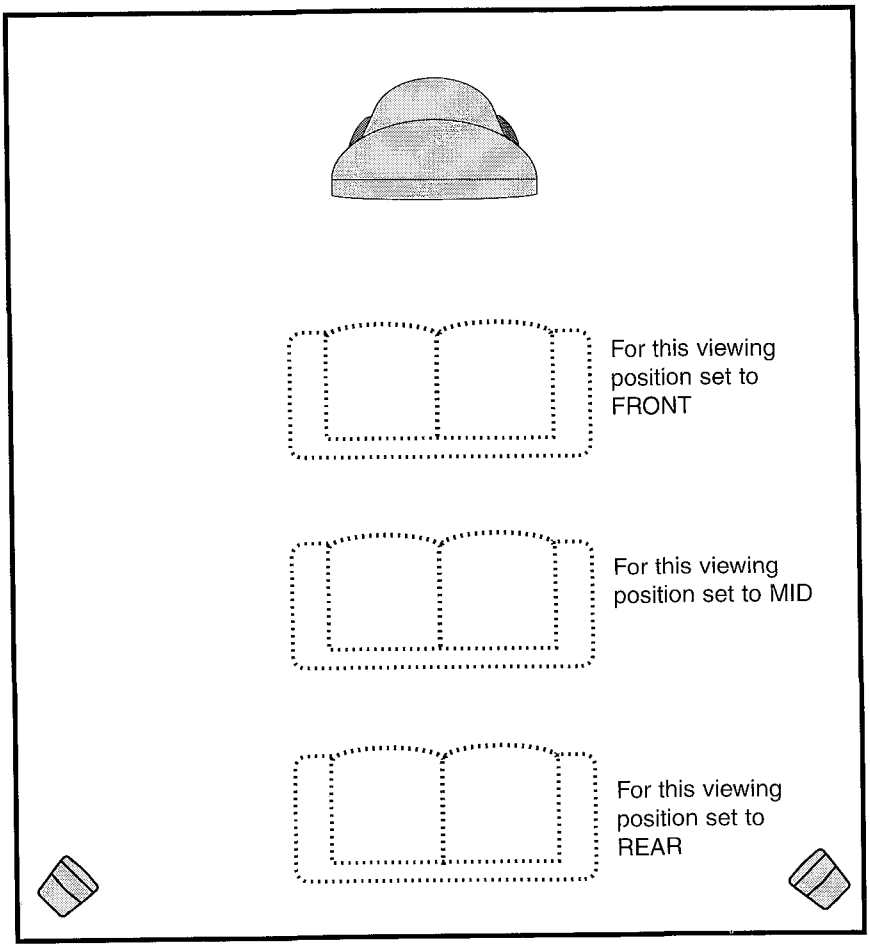
If your viewing position is not situated mid-way between the television and the rear speakers, the sound effects from the rear speakers may sometimes seem slightly out of step.
To overcome this, you can utilise the POSITION function in the DOLBY PRO LOGIC SET–UP menu.

Press the ▼ button to highlight the present setting of the POSITION function in the DOLBY PRO LOGIC SET–UP menu. This will be coloured, and will be either FRONT, MID or REAR.

Refer to the drawing below (which is similar to the one in the on-screen display), and use the ► or ◄ button of handset to set the POSITION function according to your viewing position.



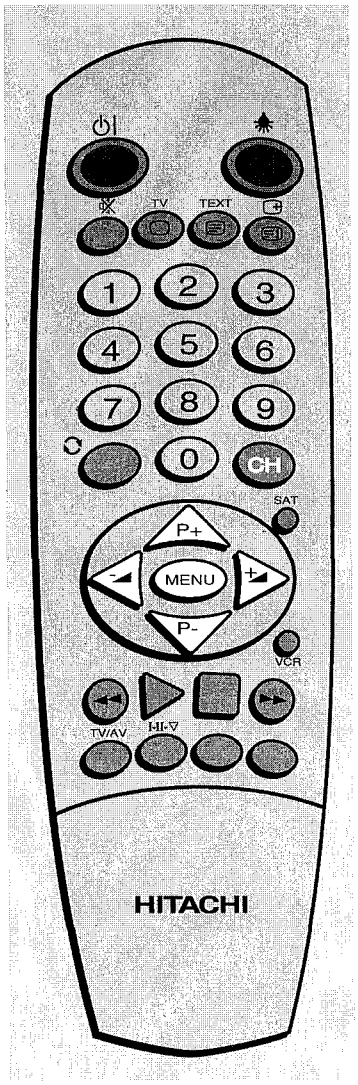
REAR Selected



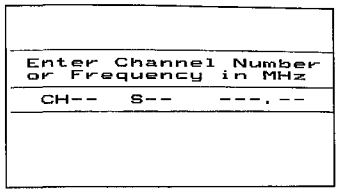
Once you have set all the functions in the DOLBY PRO LOGIC SET–UP menu as desired, press the MENU button until all on-screen menus disappear.

Programme Name

This facility allows you to add a programme name of your choice to each broadcast. This can be up to 5 characters long. To name a broadcast, proceed as follows:-

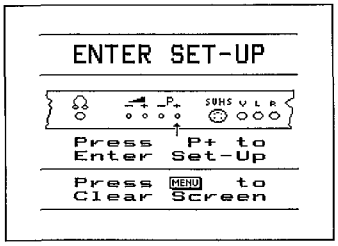


1. Press the CH button on handset. The menu shown will appear on-screen.



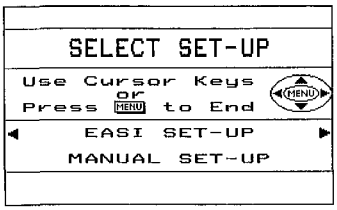
2. Now press the MENU button.

   The ENTER SET–UP menu is then displayed.

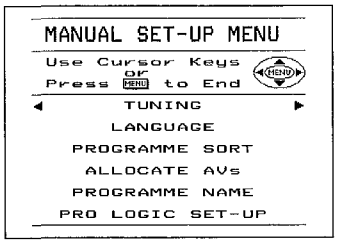


3. As instructed, press the **P+** button on the front control panel.

   The SELECT SET–UP menu will now appear.

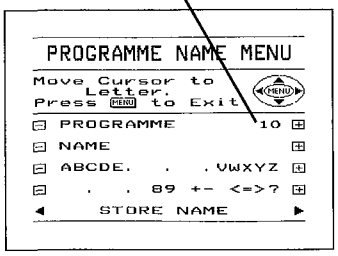


4. Press the ▼ button of handset to highlight MANUAL SET–UP, then press one of the ◄ or ► handset buttons to display the MANUAL SET–UP menu.



5. Press the ▼ or ▲ buttons to highlight PROGRAMME NAME, then press the ◄ or ► button.
   The PROGRAMME NAME MENU will now appear on-screen.

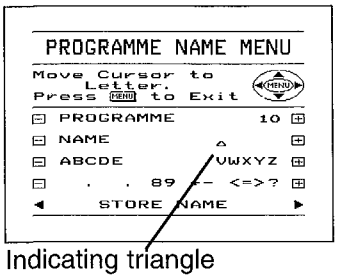
Programme 10 chosen



6. The first line in the display, i.e. PROGRAMME will be highlighted.
   Press the ◄ or ► buttons until the programme number of the broadcast you wish to name appears.

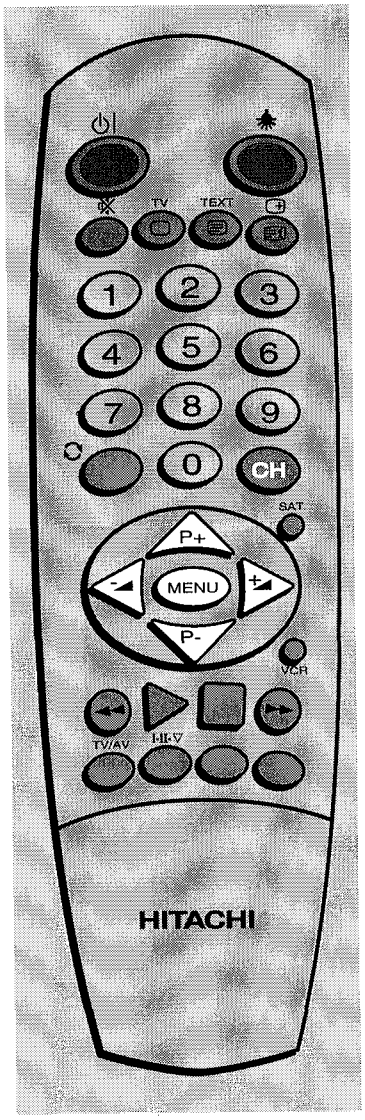
7. Press the ▼ button to highlight NAME in the display, then press the ◄ or ► button.
   A coloured indicating triangle then appears in that line.

   If the programme number has been previously given a name, the triangle will appear under the first letter of the name.

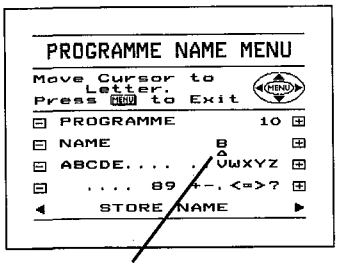


Indicating triangle

Programme Name



8. Press the ▼ button to highlight either the letter selection or number selection line of this display, then press the ◄ or ► button until the first letter or number you require appears in the NAME line of the display.

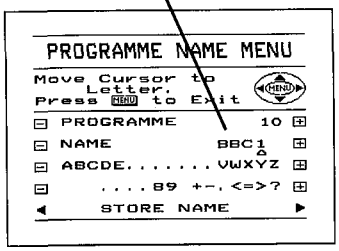


Letter B chosen and placed

9. Press the ▲ button to highlight NAME once again, then press the ► button. The indicating triangle will now move to the right.

10. Repeat step 8 until your second letter or number appears in the NAME line of display.

Name completed



11. Repeat this procedure until programme name is completed, then press the ▼ button to highlight STORE NAME in the display.

12. Press the ◄ or ► handset button to store. STORE NAME will flash briefly to indicate the programme name has been stored.

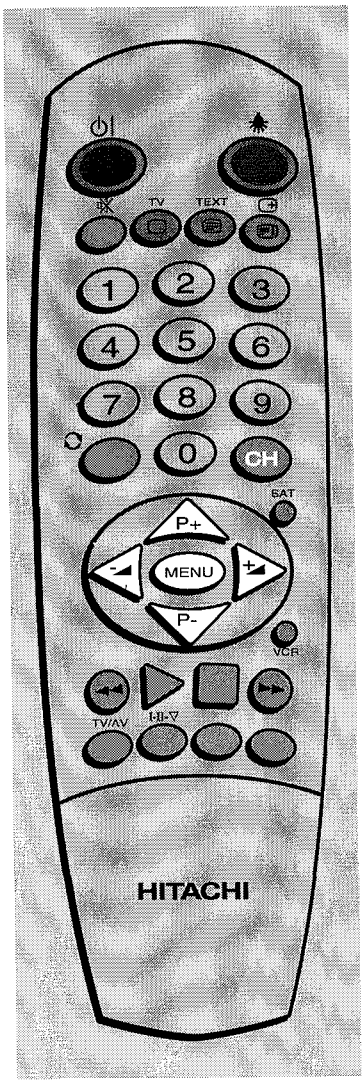
13. Press the MENU button until all the on-screen displays have disappeared.

SATELLITE NAME

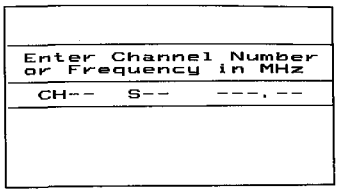
When a satellite broadcast has been found and identified during the tuning procedure, only the programme name of the captured transmission will be displayed on screen. Therefore, in order to avoid confusion, we recommend you use this programme name procedure to give a general name, e.g. SAT, to the programme number that contains the satellite broadcast.

Programme Swap

Should you desire, you can change the programme number order in which your broadcasts appear using this feature. The following example explains how to move the broadcast tuned to programme number 5, and allocate it to programme number 1.

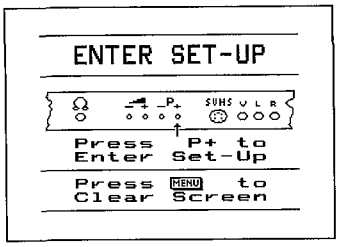


1. Press the CH button on handset. The menu shown will appear on-screen.



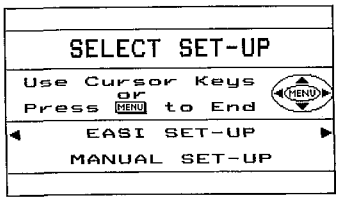
2. Now press the MENU button.

   The ENTER SET–UP menu is then displayed.

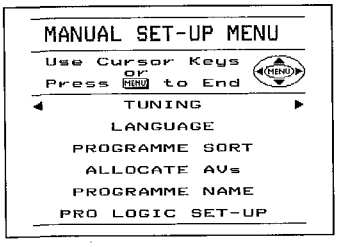


3. As instructed, press the **P+** button on the front control panel.

   The SELECT SET–UP menu will now appear.

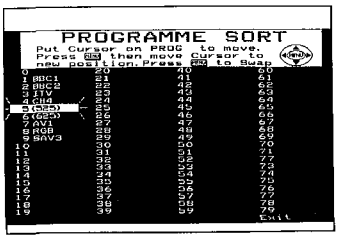


4. Press the ▼ button of handset to highlight MANUAL SET–UP, then press the ◄ or ► handset button to obtain the MANUAL SET–UP menu.



5. Press the ▼ or ▲ buttons to highlight PROGRAMME SORT in the display, then press ◄ or ► buttons to obtain the menu shown.
   This menu displays all the broadcasts in the order in which they were stored during the tuning in procedure.

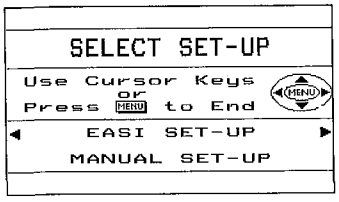
Programme number 5 selected



6. Press the ►, ◄, ▼ or ▲ buttons until programme number 5 is highlighted, then press the MENU button. Programme number 5 will now begin to flash.

7. Press the ►, ◄, ▼ or ▲ buttons until programme number 1 is highlighted, then press the MENU button. The broadcast that was previously on programme number 5 will now be allocated to programme number 1, and the broadcast that was previously on programme number 1 will be allocated to programme number 5.

8. Repeat this procedure with any other programme numbers you wish to swap, then press the ►, ◄, ▼ or ▲ buttons until EXIT is highlighted. This is at the bottom right side of the on-screen display.
   The SELECT SET–UP menu will now be displayed.



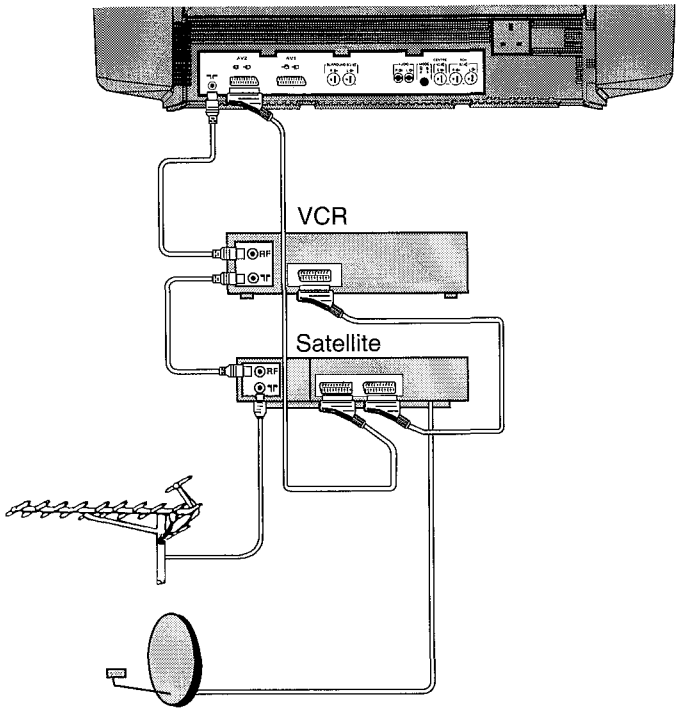
9. Press the MENU button. The on-screen display will disappear.

Connecting External Audio/Video Equipment

SATELLITE CONNECTION

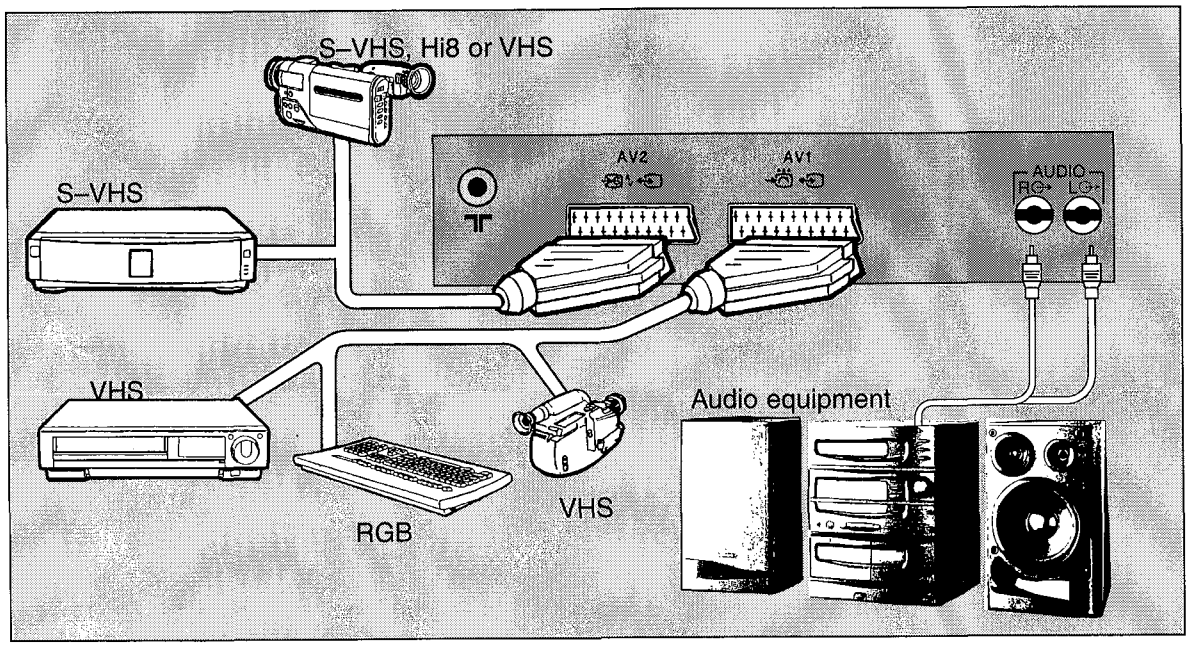
Should you wish to connect a satellite receiver to this television for viewing, and also to a VCR for recording, we recommend you connect them to the scart sockets as shown.
Using this method, you can still record satellite programmes whilst the television is switched OFF.
Please refer to your satellite and VCR operating guides in conjunction with this operating guide.

NOTE: If your VCR or satellite receiver does not have an equivalent scart connector, do not forget to allocate a programme number to each of them as previously explained.



Connecting External Audio/Video Equipment

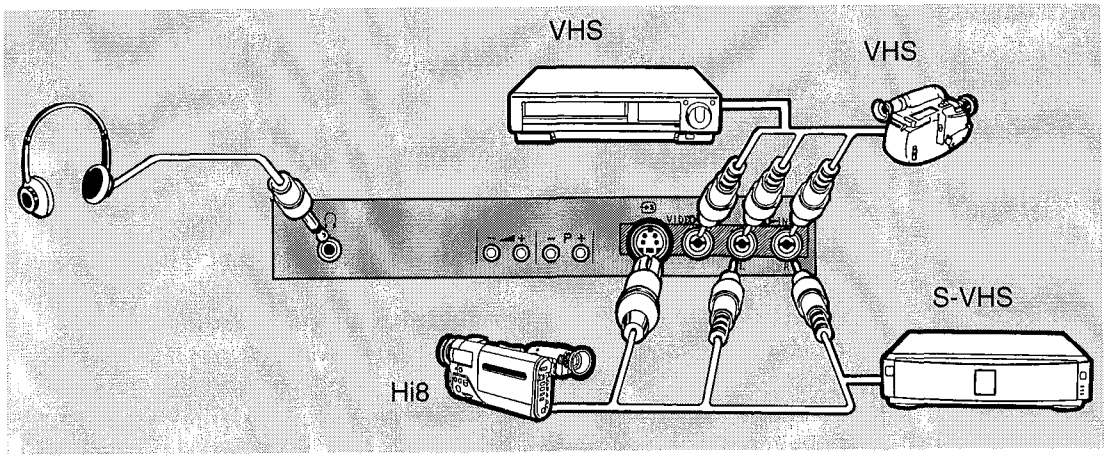
REAR OF T.V. VCRs can be connected to this television via the aerial socket as shown on page 4 of this operating guide.
However, most VCRS now have scart sockets which enable direct connection to the scart sockets of this television. Other equipment can also be connected to these scart sockets as shown in the drawing below.



If your VCR or camcorder etc. has an equivalent scart socket, then to replace the T.V. broadcast with signals from your equipment, simply connect to the televisions scart sockets using a scart connecting lead, then operate according to your equipment's instructions to view.
However, for S–VHS equipment connected to AV2 socket, we recommend you select SAV in the AV Location menu. Please refer the next page for instructions on how to obtain this menu, and read the note after step 5.

NOTE: Stereo VCRs etc. must be connected to one of these scart sockets to assure stereo sound playback. Therefore, if your equipment has alternative connections for Audio/Video, obtain a suitably adapted lead from your dealer and refer to the instructions for "Allocating Programme Numbers To The Audio/Video Sockets" on the next page.

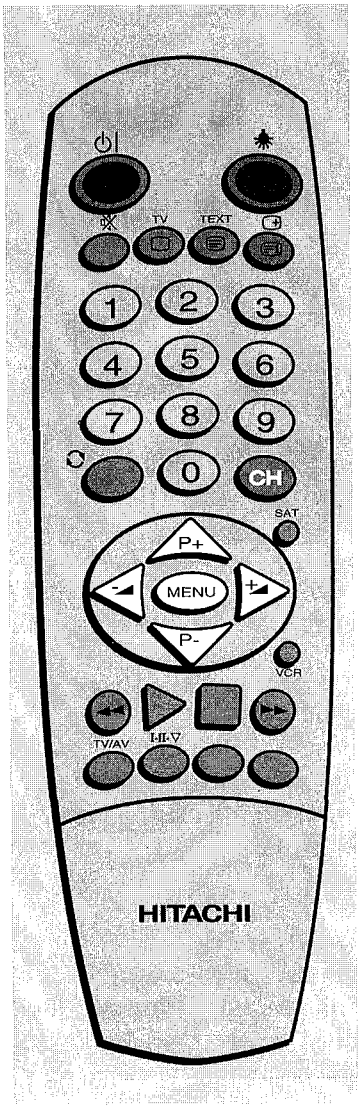
FRONT OF T.V. Push the door on the front of this television to gain access to the Audio/Video sockets.
Camcorders and VCRs with Phono plugs can be connected to these sockets as shown in the drawing below.
When an S-VHS VCR or an S-VHS or Hi8 camcorder is connected as shown, the T.V. broadcast will be replaced by the signals from the equipment once it is in operation.
For other equipment connected to the phono sockets, please refer to the instructions for "Allocating Programme Numbers To The Audio/Video Sockets" on the next page.



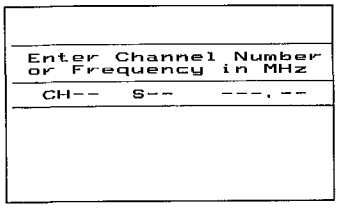
Connecting External Audio/Video Equipment

ALLOCATING PROGRAMME NUMBERS TO THE AUDIO/VIDEO SOCKETS

This feature is generally only required if your VCR or camcorder etc. does not have an equivalent scart socket for direct connection, or if you decide to connect them via the Audio/Video phono sockets on the front of this television.
Connect your equipment to the desired socket using the Phono leads or an adapted scart lead supplied by your dealer, then proceed as follows:–

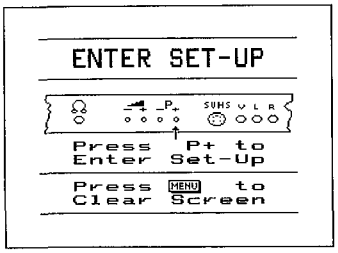


1. Press the CH button on handset. The menu shown will appear on-screen.



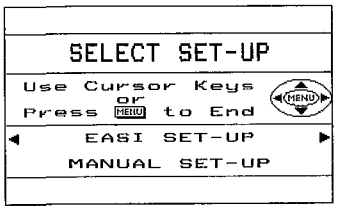
2. Now press the MENU button.

   The ENTER SET–UP menu is then displayed.

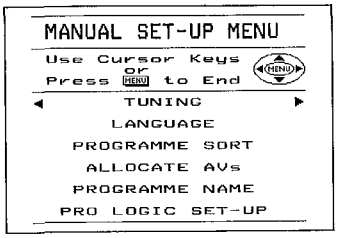


3. As instructed, press the **P+** button on the front control panel.

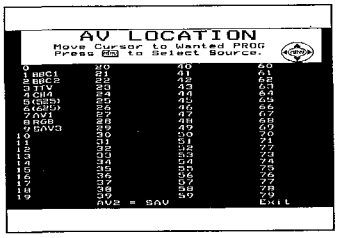
   The SELECT SET–UP menu will now appear.



4. Press the ▼ button of handset to highlight MANUAL SET–UP, then press the ◄ or ► button to display the MANUAL SET–UP MENU.
   TUNING will be highlighted.



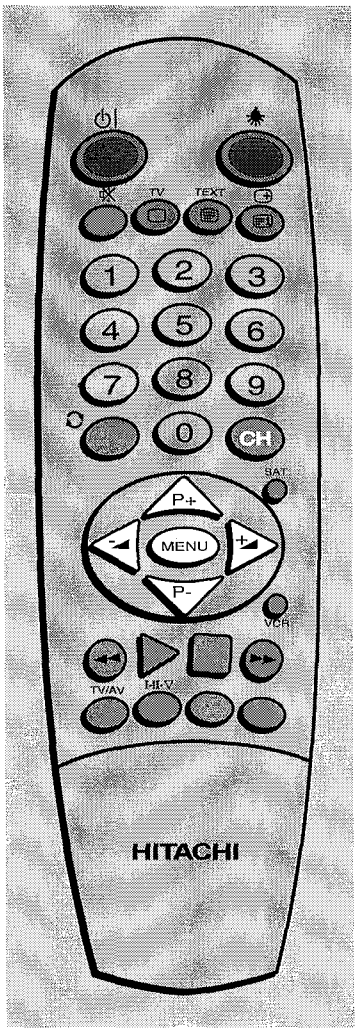
5. Press the ▼ button until ALLOCATE AVs is highlighted, then press the ◄ or ► button to display the AV Location menu.
   This menu shows all the programme numbers 0 – 79 and the identification and/or programme names allocated to all the broadcasts that have been tuned in.



NOTE: Under programme number 39 in this display, AV2 = will be seen.
Use the ◄, ►, ▼ or ▲ buttons on handset to highlight this, then press the MENU button to display SAV after the = sign.
If your S–VHS equipment has a scart connecting socket, playback can now be viewed on any programme number.

To allocate specific programme numbers to your external equipment, proceed as follows:

Connecting External Audio/Video Equipment



6. Using the ◄, ►, ▼ or ▲ buttons, highlight the programme number you desire to use for viewing inputs from your VCR etc.
   Do not choose one that contains a broadcast you wish to keep.
   Programme number 5 is shown in example.

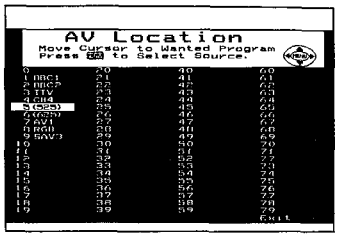
7. Press the MENU button until the letters representing the socket into which your equipment is connected, are displayed alongside the programme number. (see the table below.)

8. *You cannot allocate more than one socket to each* programme number.
   Therefore, should you desire to connect equipment to another socket, first press the ◄, ►, ▼ or ▲ buttons to highlight a new programme number, then press the MENU button until the letters representing that socket appear alongside the programme number.

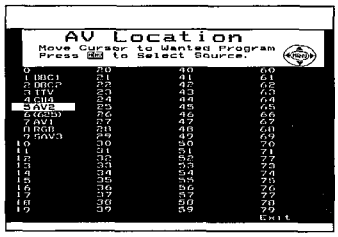
9. *Repeat this procedure until all the equipment you wish* to connect to the television have been allocated programme numbers, then press the ◄, ►, ▼ or ▲ buttons to highlight Exit at the bottom right hand side of the T.V. screen.
   The SELECT SET–UP menu will then appear.
   Press the MENU button and the on-screen display will disappear.

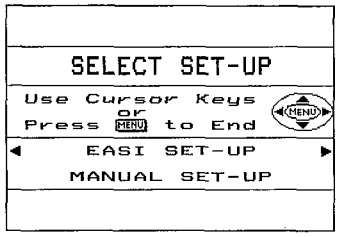
PLEASE NOTE: When you wish to view inputs from your equipment, do not forget to first select the programme number you have allocated to it in this procedure.

Programme number 5 chosen



AV2 socket chosen





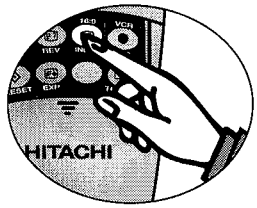
LETTERS DISPLAYED	SOCKET SELECTED	EQUIPMENT TO BE CONNECTED
AV1	AV1 SCART	VHS VCRs or CAMCORDERS
RGB	AV1 SCART	COMPUTERS or GAME CONSOLES etc.
AV2	AV2 SCART	VHS VCRs or CAMCORDERS
SAV2	AV2 SCART	S–VHS VCRs, Hi8 or S–VHS-CAMCORDERS
AV3	AUDIO/VIDEO PHONO SOCKETS	VHS VCRs or CAMCORDERS
SAV3	5 PIN SOCKET ON FRONT OF T.V.	S–VHS VCRs, Hi8 or S–VHS-CAMCORDERS

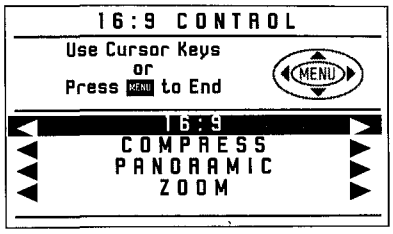
TEMPORARY CONNECTIONS If you only wish to connect some equipment temporarily, there is no need to allocate a specific programme number to it.
Simply connect to the desired socket using the Phono leads or adapted lead from your dealer, then press the TV/AV button on the handset until the letters representing that socket appears, i.e. AV1, AV2, RGB etc.
Now operate your equipment according to instructions to view.
When viewing has ended, press the TV/AV button until the T.V. broadcast re-appears, then disconnect your external equipment from the socket.

Wide Screen Functions

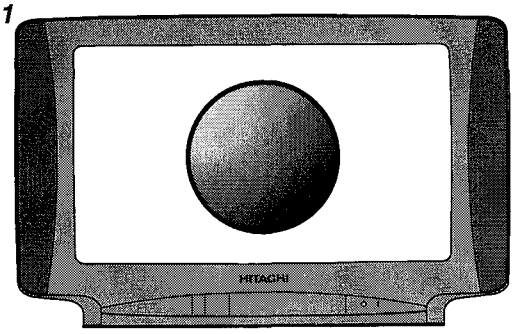
The 16:9 Menu allows the user to select between various wide screen options when viewing 16:9(wide screen) or 4:3 (normal screen) transmissions. Each option creates a visual effect which can be selected to suit your own personal taste. Follow the guide below to enter and select the 16:9 options.

To obtain the 16:9 menu, slide down the concealed compartment door on your handset. Press the 16:9 button once to activate. Use the ▼ ▲ cursor buttons to highlight an option, then use the ◄ ► buttons to select. Press the MENU button to store and quit.

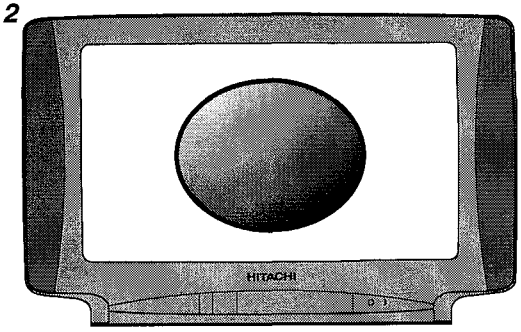




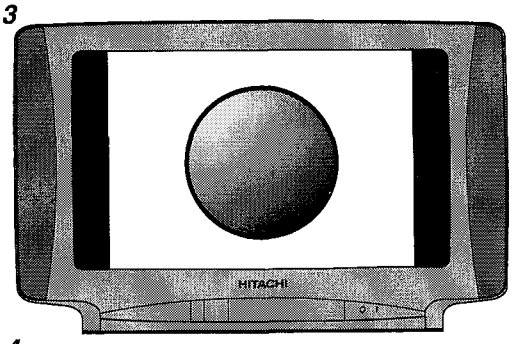
Example 1



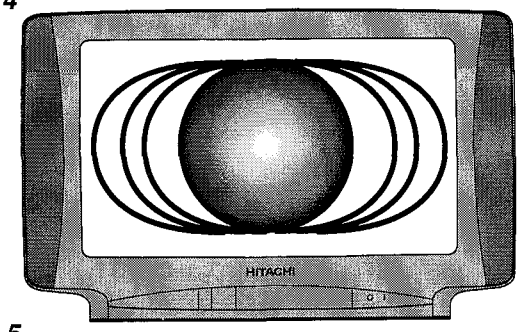
Example 2



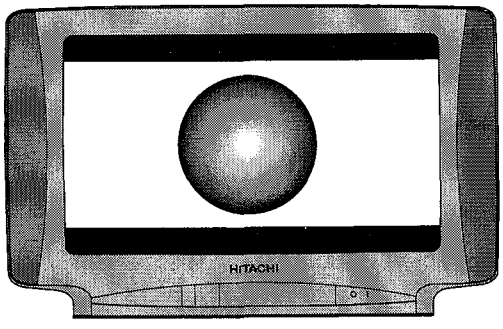
Example 3



Example 4



Example 5



The 16:9 mode allows Wide Screen viewing of Wide Screen broadcasts. These broadcasts are often pre-announced before transmission i.e. the presenter may say that a movie will be shown in Wide Screen format before it is broadcast. Another method of distinguishing Wide Screen broadcasts is to observe object shapes on-screen. If 16:9 is selected for Wide Screen broadcasts, then the shapes will appear normal (Example 1). However, if 16:9 mode is selected to view a Normal Screen broadcast, then the shapes are shorter and wider as shown in Example 2.

It is possible to view Normal Screen 4:3 transmissions on this TV. When COMPRESS is selected, the picture is compressed to a 4:3 ratio so that Normal Screen broadcasts may be viewed correctly (Example 3). Please note that the black bars that appear on the sides of the screen are a feature of the COMPRESS mode, these bars are normal.

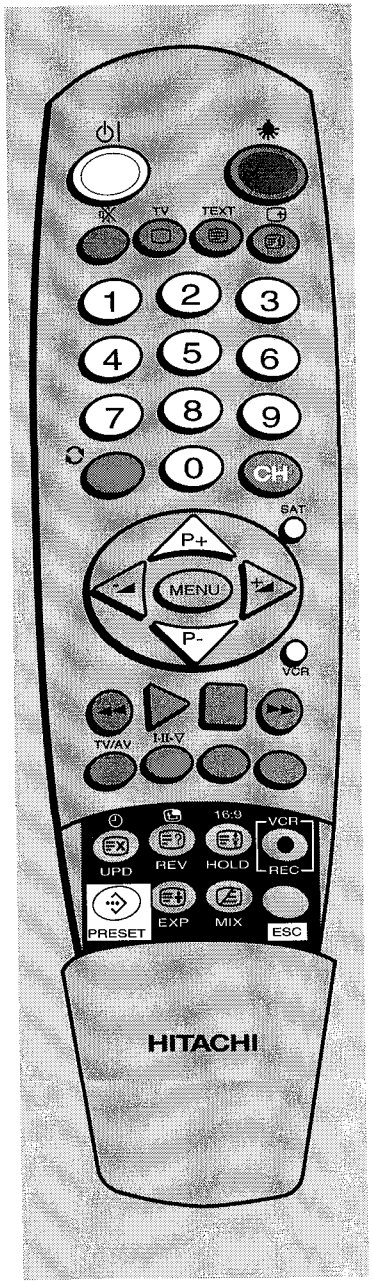
Another useful feature of the 16 x 9 CONTROL menu is the PANORAMIC mode. When viewing Normal Screen transmissions the Panoramic mode emulates that of a Wide Screen broadcast (Example 4). This is done by keeping the centre of the screen in normal proportions, while extending the edges of the screen, giving the viewer the illusion of a Wide Screen broadcast while actually watching Normal TV broadcasts.
We suggest that the PANORAMIC option is selected for the majority of TV viewing.

The ZOOM feature enables the viewer to enlarge a picture if a compressed 16:9 broadcast is being transmitted (Example 5). When selected the ZOOM feature expands the screen vertically, thus removing the upper and lower black bars to display the full TV screen.
NOTE: When viewing TELETEXT while in ZOOM mode, only one half of the page can be viewed at any one time. To display either the TOP or BOTTOM half of the page, use P+ and P- cursor buttons on your handset respectively.

If you have external equipment connected that has automatic 16:9 capabilities (VCR or Satellite[refer to user guides]), then the TV will automatically detect a Wide Screen broadcast and switch to the 16:9 mode. *Equipment must be connected to the AV1 socket in order for the 16:9 detection to function.*

To Programme Handset For VCR or Satellite

This handset is capable of operating most makes of VCR or satellite receivers on the market today.
This can be achieved by simply entering the correct three digit code allocated to the model you have, into the handset.
The full CODE list can be found on pages 37 – 38.



VCR METHOD

1. Press the VCR button of handset, and before releasing it press the preset button ⋯◇.
2. Refer to the CODE list, then using the handset buttons 0 – 9, enter the correct three digit number for your equipment.

   For example, if you have an Hitachi VCR, then enter 0, 2 and 6 for code 026 or 0, 6 and 8 for code 068.
   After the last digit has been entered, the handset will return to its TV mode of operation.
3. This handset can now be used to operate the PLAY, RECORD, FAST FORWARD, REWIND and STOP functions your VCR, simply by pressing the corresponding buttons on this handset (refer to page 6).

ADDITIONAL OPERATIONS:

To increase or decrease the VCR programme number:-
Press the VCR button on the handset, and before releasing it press the P+ or P– button.

To turn the VCR power off (standby)
Press the VCR button on the handset, and before releasing it press the ⏻| button.
Repeat this procedure to return the VCR to normal operation.

SATELLITE METHOD

1. Press the SAT button of handset, and before releasing it press the preset button ⋯◇.
2. Refer to the CODE list, then using the handset buttons 0 – 9, enter the correct three digit number for your equipment.

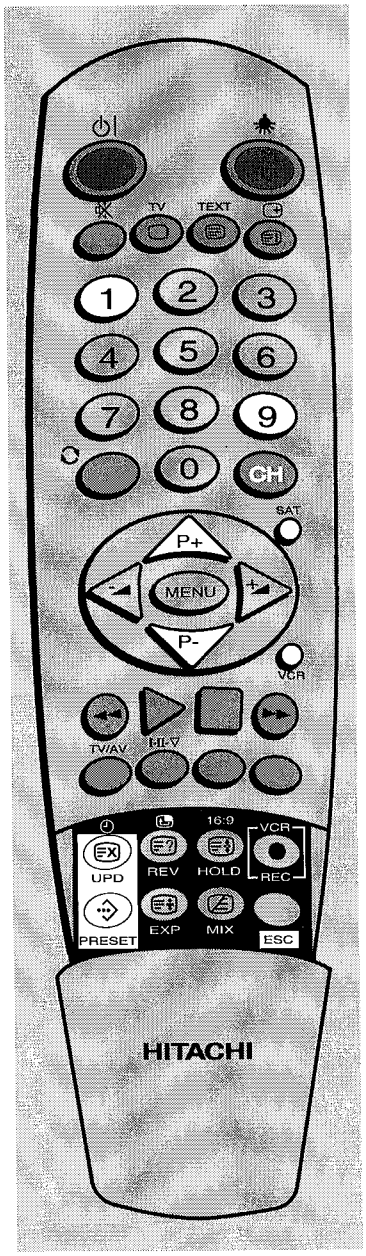
   For example, if you have an Hitachi satellite receiver, then enter 4, 8 and 1 for code 481.
   After the last digit has been entered, the handset will return to its TV mode of operation.

To increase or decrease the satellite programme number:-
Press the SAT button on the handset, and before releasing it press the P+ or P– button.

To turn the satellite power off (standby)
Press the SAT button on the handset, and before releasing press the ⏻| button.
Repeat this procedure to return the satellite equipment to normal operation.

PLEASE NOTE: Whenever new batteries are inserted into this handset, the VCR and satellite codes may need to be re-entered.

To Programme Handset For VCR or Satellite



STEP AND SET METHOD

At some time in the future, new models may be released which will not be covered by the codes contained in the CODE list.

If this happens, the step and set method may be of help.

1. Press the VCR or SAT button on the handset, and before you release it, press the preset button ⋯◇.

2. Enter the code 991 by pressing the handset buttons 9, 9 then 1.

3. Aim the handset at the equipment selected in step 2 (VCR or satellite), and press the P+ or P– button.
   If the programme number of the equipment changes, then the present setting of the handset is suitable.
   Press the preset button ⋯◇ to store.
   This handset will now operate the VCR or satellite features as explained on page 31.

4. If the programme number does not change, pull down the front cover of the handset and press the UPD button, then press the P+ or P– button again.

5. If the programme number still does not change, press the UPD then the P+ or P– buttons again, and keep repeating this step and set procedure until the programme number does change, then press the ⋯◇ button to store.

NOTE: If after 50 or so step and set operations, the handset still does not operate your equipment, then the code is probably not available.

CODE LIST FOR PROGRAMMING HANDSET

VCRs

MAKE	CODE
ASA	107 063
Adventura	026
Aiwa	026
Akai	132 341
Amstrad	026
Audiovox	063
Asuka	063
Baird	130
Bell & Howell	130
Blaupunkt	252 221 060
CGE	026
Calix	063
Carver	107
Citizen	063
Craig	063
Daewoo	071
DeGraaf	068
Decca	026 107
Dumont	026 130 107
Dynatech	026
Electrohome	063
Electrophonic	063
Emerex	058
Emerson	026 063 069
Fidelity	026
Finlandia	107 130
Finlux	026 130 107 068
Firstline	069 071 063
Fisher	130 072
Funai	026
GEC	107
Garrard	026
Goldstar	063
Goodmans	026
Graetz	130
Gradiente	026
Granada	130 107 072
Grandin	063 026
Grundig	221 252 107 373
Harley Davidson	026
Headquarter	072
Hitachi	068 026
ITT	130 072 132 410
ITV	063
Imperial	026
Interfunk	107
JVC	093 034 410
Kendo	132
Kenwood	072 093 410
Kodak	063
Loewe	063 107
Logik	240
Lloyd	026
Luxor	132 072 069
LXI	063
Magnavox	107

VCRs

MAKE	CODE
Manesth	071
Marantz	107
Marta	063
Mediator	107
M-Electronic	026
Memorex	130 063 026 072 074
Metz	221 188 373
MGA	069
Minerva	221
Minolta	068
Mitsubishi	069 107 093
Motorola	074
MTC	026
Multitech	026
Murphy	026
NEC	093
Neckermann	107
Nikko	063
Nokia	130 132 072 240
Nordmende	410
Oceanic	026
Okano	341
Olympus	252
Optimus	063 074 458
Osaki	026 063
Otto Versand	107
Palladium	063
Panasonic	252 188
Penney	063 068
Pentax	068
Perdio	026
Philips	107
Phonola	107
Pilot	063
Pioneer	093 107
Profitronic	240
Proline	026
Pye	107
Quarter	072
Quartz	072
Quelle	107
Radiola	107
Radio Shack	026 063
Radix	063
Randex	063
RCA	068 132
Realistic	072 072 026 063 130
Rex	410
Ricoh	060
Roadstar	063 240
SBR	107
SEG	240
SEI	107
Saba	410
Salora	069 072 132
Samsung	071 240 458

CODE LIST FOR PROGRAMMING HANDSET

VCRs

MAKE	CODE
Sansui	093
Sanky	074
Sanyo	072
Schaub Lorenz	026
Schneider	026 107
Scott	071 069
Sears	063 068 072 130
Sharp	074
Siemens	221 130 063
Silva	063
Sinudyne	107
Sontec	063
Sony	060 058
STS	068
Sunstar	026
Sylvania	026 069 107
Symphonic	026
Tashiko	026
Tatung	026 107
Teac	026
Technics	188
Teknika	063 026
Telefunken	410
Tensai	026
Thomson	410
Toshiba	069 071 410
Totevision	063
Universum	221 026 132 107 063
Yoko	240

SATELLITE RECEIVERS

MAKE	CODE
Akai	541
Alba	481 541
Amstrad	278 371 487
Astra	134
BT	541
Cambridge	282 370 541
DNT	226
Ferguson	362
Fidelity	278
Finlux	134 481 370
Fuba	198
Gooding	597
Grundig	354 597
Hirschmann	423
Hitachi	481
ITT	198 134 541
JVC	541
Kathrein	226
Luxor	134 198
Manhattan	481
Marantz	226
Maspro	354 362
Matsui	370
Nokia	134 354 198 423 481
Oxford	370
Pace	354 481 366
Panda	481
Philips	226 481 354
Radiola	226
Saba	362
Sabre	481
Salora	134 198
Sat	481
Satec	354
Tantec	362 481
Thomson	481
TechniSat	288
Ventana	226
Wisi	481